Algebraic Fractions

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Examples

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Workout

Question 1: Express the following as a single simplified fraction.

(a) $\frac{x}{3} + \frac{x}{5}$

(b) $\frac{c}{2} + \frac{c}{7}$

(c) $\frac{w}{3} + \frac{w}{9}$

(d) $\frac{x}{2} - \frac{x}{3}$

(e) $\frac{a}{5} - \frac{a}{9}$

(f) $\frac{m}{2} - \frac{m}{8}$

(g) $\frac{m}{3} + \frac{2m}{7}$

(h) $\frac{3x}{5} + \frac{x}{2}$

(i) $\frac{3c}{4} + \frac{5c}{9}$

(j) $\frac{m}{2} - \frac{2m}{5}$

(k) $\frac{3n}{4} - \frac{5n}{9}$

(l) $\frac{7h}{8} - \frac{5h}{12}$

Question 2: Express the following as a single simplified fraction.

(a) $\frac{2}{x^2} + \frac{5}{x}$

(b) $\frac{5}{6x} - \frac{1}{3x}$

(c) $\frac{2}{fg} - \frac{4}{g}$

(d) $\frac{6}{ac} + \frac{2}{3}$

(e) $\frac{9}{w} + \frac{wx}{4}$

(f) $\frac{d}{3} + \frac{2}{d^2}$

(g) $\frac{m^2}{6} - \frac{9}{4m}$

(h) $\frac{3}{4b^2} - \frac{1}{2b}$

(i) $\frac{ac}{5} + \frac{4}{c}$

(j) $\frac{x^3}{w} - \frac{2}{wx^2}$

(k) $\frac{2}{ab^2} - \frac{3}{b^3}$

(l) $\frac{xy}{5} - \frac{1}{x}$

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Question 3: Express the following as a single simplified fraction.

(a) $\frac{x+4}{3} + \frac{x+1}{2}$

(b) $\frac{2x+1}{2} + \frac{x+3}{5}$

(c) $\frac{5x-2}{3} + \frac{2x+7}{4}$

(d) $\frac{3x+11}{2} + \frac{x-20}{3}$

(e) $\frac{5x-4}{2} + \frac{x+1}{3}$

(f) $\frac{x-4}{8} + \frac{2x-3}{2}$

(g) $\frac{7x+4}{2} - \frac{x+1}{3}$

(h) $\frac{9x+1}{5} - \frac{x+2}{2}$

(i) $\frac{3x+11}{2} - \frac{2x-3}{6}$

(j) $\frac{x-8}{3} - \frac{x-5}{7}$

(k) $\frac{4x-7}{10} - \frac{2x-9}{3}$

(l) $\frac{5-x}{6} - \frac{8-3x}{10}$

Question 4: Express the following as a single simplified fraction.

(a) $\frac{2}{x+5} + \frac{3}{x+1}$

(b) $\frac{2}{x+1} + \frac{1}{x+3}$

(c) $\frac{4}{x+5} - \frac{2}{x-1}$

(d) $\frac{x+1}{x-2} + \frac{x+3}{x+5}$

(e) $\frac{x+3}{2x+1} - \frac{x-2}{x-1}$

(f) $\frac{x}{x+7} + \frac{2x+5}{3x+1}$

(g) $\frac{3}{x+1} + \frac{x+7}{(x+1)(x+2)}$

(h) $\frac{1-x}{(x-7)(x+1)} - \frac{2}{x-7}$

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Question 5: Solve the following equations

(a) $\frac{x + 5}{3} + \frac{x + 1}{2} = 8$

(b) $\frac{x + 6}{5} + \frac{x - 3}{2} = 13$

(c) $\frac{2x - 1}{4} + \frac{x - 3}{5} = 3$

(d) $\frac{x + 5}{10} - \frac{x + 4}{2} = 1$

(e) $\frac{x - 3}{4} - \frac{x - 8}{3} = 4$

Question 6: Solve the following equations

(a) $\frac{4}{x + 1} + \frac{2}{x - 2} = 3$

(b) $\frac{2}{x - 3} + \frac{1}{x - 4} = 2$

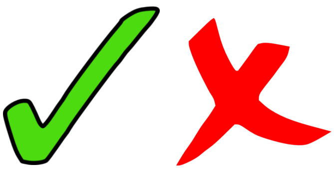
(c) $\frac{2}{x - 5} - \frac{2}{x - 4} = 1$

(d) $\frac{2}{x + 1} - \frac{10}{x + 4} = -1$

(e) $\frac{3}{x - 2} + \frac{3}{x + 2} = 2$

(f) $\frac{11}{(x - 1)(x + 4)} + \frac{5}{x - 1} = 1$

Answers



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